

(Re)connecting the food chain: Entangling cattle, farmers and consumers in the sale of raw milk

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Abstract

This article investigates the growing market for cow's milk sold directly from the farm, often known as 'raw milk'. Drawing on qualitative research with UK raw milk producers we add new insights to the sociology of food by demonstrating how knowledge about the 'goodness' and 'purity' of cow's milk arises and becomes powerful in producer and consumer groups. Our empirical findings highlight that for a small proportion of producers and consumers, raw milk helps to provide visual, gustatory and sensory points of contact. These contact points, we argue, address some of the contemporary concerns that have arisen over the source, content and ethics of milk by bringing together the means and ends of the food chain. Importantly within this process, cattle and farmyards help forge a powerful entanglement that sustains the commercial exchange. Our findings show that messages about 'goodness' and 'purity' in raw milk provide a timely counterpoint to the distancing and separation that characterises many modern food chains.

Keywords

agricultural production, bodies and affects, entanglement, food ethics, milk

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Introduction

Cow's milk is a staple for the majority of western consumers and is embedded in practical, social and symbolic processes of 'provisioning' (Munro, 2012): the production, acquisition, consumption and disposal of household groceries. While for many consumers, milk is acquired from supermarkets, over the last two decades it has become more popular for dairy farmers to sell milk directly from their farms (often from vending machines). This is known commonly as 'raw' milk, inferring that it is less processed than milk which is collected, pasteurised and bottled by dairies. While only a minority of dairy farmers sell raw milk, and the attendant literature is limited, there have been studies of its perceived health and taste benefits within geography, health and science studies (Linn, 2018) although it has received little attention in the sociology of food. Drawing on Latimer and López Gómez's (2019) concept of 'intimate entanglements', this article brings new focus to raw milk by showing how notions of purity and goodness are empowered through the processes of production and consumption.

We draw on qualitative research with producers to highlight how raw milk is providing a counterpoint to concerns that the 'technologizing of food production and processes has gone too far' (Dowler et al., 2009, p. 215) by 'repressing rather than confronting the intimacy' afforded by food (Latimer & López Gómez, 2019, p. 250). We contend that raw milk disrupts normative conceptions of healthiness and purity by connecting animals, farmers and customers (Morris & Kirwan, 2010). Here, the conceptual frame of 'intimate entanglements' (Latimer & López Gómez, 2019) is applied to show how such connections form and gain power. Latimer and López Gómez state that intimacy is concerned with 'feel' and affect – a state whereby someone or something becomes 'part of one's parts' (Strathern & Latimer, 2019, p. 481). This is a social and political process through which people, materials and other-than-human life are enmeshed within relations (or tangles). Unlike other studies of entanglements in science and technology, Latimer and López Gómez pay significantly more attention to the sensory and affective element of networks, which is useful for reflecting upon the symbolic and literal ways in which raw milk is absorbed by the body. Drawing upon Latimer and López Gómez's (2019) theorisation, we provide new insights into the processes by which this tangle of intimacy is activated and performed by producers.

Experiences of intimacy have been explored in varied cultural, economic and political contexts (for example, Walkerdine's [2016] work on 'affective communities' and Shilling's [2018] work on body studies). Trajectories of this broad literature are apposite for exploring entanglement, including pragmatist readings of attachment (Gomart & Hennion, 1999), partial connection (Strathern, 1991), or the 'unconcealing' of the ethics and politics of relations (Martin et al., 2015), though we selected the framing of intimacy set out by Latimer and López Gómez (2019) because they consider it a social, rather than private phenomenon (Raffles, 2002), which is not restricted to human actors.

Our focus is on the work that is done by producers to mediate this relationship. Milk is the embodied materiality that mediates experience and subjectivity (Abbotts & Lavis, 2013; Latimer & Schillmeier, 2009) as well as the social order of commercial inscription (Munro, 2012). To situate and explore this analysis, our article commences with a review of literature that provides context for understanding raw milk production and consumption within contemporary food concerns. We then turn to a description of our methodology before

discussing our empirical findings and their implications for notions of ‘goodness’ and ‘purity’ in raw cow’s milk production and consumption.

Milk consumption, goodness and purity

Milk production is of major importance in the global food industry which is reflected in multi-disciplinary studies in geography (Enticott, 2003), public policy (Atkins, 1992; Finnell & John, 2017), social marketing (McEachern & Willock, 2004), ecofeminist literature (Adams, 2017), science and technology studies, history and law (Atkins, 2010; Cohen & Otomo, 2017; Nimmo, 2011). Such studies acknowledge that milk production has long been associated with economic development, nationalism and citizenship. Recent initiatives in India, China, Iran and Russia (Fuller et al., 2006) underline that the national volume of production is important because transporting unprocessed liquid milk is problematic; it spoils quickly and supply chains need to be relatively short.

The UK is the third-largest milk producer in Europe after Germany and France and dairy produce accounts for 17.8% of national agricultural output – a market worth £4.6bn (Department for Environment, Food and Rural Affairs [Defra], 2020a). Though country dwellers in Britain have always had reasonable access to milk, long delays in supply chains and a lack of refrigeration were particularly problematic in the nineteenth century (Smith-Howard, 2017). Urbanisation and the growing demand for milk led to disastrous attempts to transport fresh milk to cities. The establishment of urban farms aimed to bring cattle closer to consumers but as a result of poor hygiene, milk not only remained a short-life product but was also a vehicle of many infectious diseases of the time such as tuberculosis, diphtheria, scarlet fever and typhoid (Atkins, 1992). To increase the quality and lifespan of milk in burgeoning cities, unprocessed milk had to be made safe, which involved the elimination of pathogens by heat treatment (pasteurisation).

From the 1950s, the UK’s Milk Marketing Board promoted pasteurised milk as being ‘full of natural goodness’ and with value-laden slogans such as ‘is your man getting enough?’, ‘milk’s gotta lotta bottle’ and ‘drinka pinta milka day’, its consumption was linked to physical strength, notions of purity, domestic caring and ‘goodness’. This helps explain its centrality in the British domestic foodscape where messages have been activated by food manufacturers and retailers to present the simultaneous benefits of milk as a ‘natural’ food as well as the safety benefits of modern technology (Smith-Howard, 2017). This twin message has stoked human desire for milk through packaging features such as images of meadows, cows and barns juxtaposed with nutritional information designating pasteurisation and vitamin fortification (Hollywood et al., 2013; Smith-Howard, 2017), reassuring consumers of the fulfilment of their nutritional demands alongside their moral expectations of natural purity. The source of milk’s ‘purity’ is modern industrialised pasteurisation, but its marketing messages remain strongly bound by nostalgic tropes that pre-date it (Neill & Williams, 2016; Smith-Howard, 2017).

Challenges for UK milk

Despite such powerful discourses, the UK market for milk is now experiencing falling demand, which is echoed in other developed economies, including the US (Clay et al.,

2020). UK milk consumption is about half of 1970s levels (Defra, 2020b), particularly among younger generations (people aged 16–24); only 73% of this demographic group now drink milk, compared to 92% in the over-45s (Clay et al., 2020). Meanwhile, production costs (animal feed, land and water) have increased (Hadrach et al., 2017) and there are market uncertainties arising from Brexit and Covid-19 (Agriculture and Horticulture Development Board [AHDB], 2018, 2020). The falling demand for milk reflects a degree of concern relating to milk's nutritional properties (Clay et al., 2020). There have been concerns that full-fat dairy foods such as cheeses and milkshakes are 'risky' substances in relation to cancer, diabetes and obesity (Elwood et al., 2010; Lupton & Chapman, 1995) and, conversely, that low-fat milks are little more than processed water with limited nutritional value (Atkins, 2010).

Clay et al. (2020, p. 946) highlight that younger generations increasingly associate dairy farming with environmental damage and that 'scientific research and public messaging about the multiple benefits of reducing meat and dairy consumption has never been stronger'. Recent studies have linked a large water, land and greenhouse gas footprint to dairy relative to other foods (Poore & Nemecek, 2018); findings which have been widely publicised in the media (Pecoraro & Uusitalo, 2014). Critiques of farmed animal welfare (Gillespie, 2013) and environmental sustainability (Westhoek et al., 2014) are often deployed alongside concerns about human health and lifestyle (Doyle, 2016). Tallberg (2020, p. 11) states that eschewing milk represents a 'moral imperative based on multispecies social justice' and that, 'animals, humans and nature are all interconnected in capitalist exploitative systems' – a view which complements the abundance of press and social media coverage that has raised public awareness of ethical consumption (Doyle, 2016).

As debate has expanded, multiple, sometimes contested, interpretations about everyday foods have emerged (Pecoraro & Uusitalo, 2014). The demand for ethical production and consumption informs the innovation of new products (Sexton et al., 2019), but also adds fuel to the ideological battleground that food has increasingly become (Warde & Yates, 2016). Within this context, many consumers are now eschewing cow's milk and its derivatives altogether (Linne & McCrow-Young, 2017; Westhoek et al., 2014) to select grain and plant 'milks' (Arvidsson, 2017) such as soy, oat, pea, almond and coconut. Clay et al. (2020, p. 947) describe how the palatability of these 'mylks' is carefully choreographed by creating an 'aspirational sense of novelty and disruption'.

Clay et al. (2020, p. 947) describe 'mylks' as 'white middle-class social improvement efforts' that position the products as part of a utopian 'post-milk future, which presumes that avoiding milk will rectify issues stemming from agro-industrial dairy production'. Yet as Goodman and DuPuis (2002, p. 18) have pointed out, choosing alternative foods may lapse into 'unreflexive politics' if large corporate food producers are then unquestioningly positioned as ethical custodians. As McGivney (2020) has shown, alternative milks carry their own ethical dilemmas: intensive production methods within the almond milk industry, for example, have been criticised for undermining ecosystems for bees. Nonetheless, the growing space given over to 'mylks' in mainstream food retailers indicates their commercial potential (Linne & McCrow-Young, 2017) and provides important context for understanding the increased popularity of raw milk as a further innovation in the way contemporary milk is experienced.

Raw milk: Back to the future?

Given the disruption in the normative milk foodscape, and the marketing of new alternatives (Clay et al., 2020; Sexton et al., 2019), it is understandable that some consumers are looking for types of milk that respond to their specific nutritional and/or ethical concerns. A minority of British farms are now (re)turning to the supply of unpasteurised milk, selling directly to the public with bottles at farmers' markets and/or a delivery service or via vending machines, i.e. automatic dispenser machines located on the farm (Griffith et al., 2010). While raw milk does not address vegan critiques of the dairy industry, nor some environmental concerns about the effect of animal-keeping, the acts of provisioning that are involved provide new sensory encounters, which Dowler et al. (2009) and Morgan (2010) link to nostalgic ideals of pre-pasteurisation (DuPuis, 2002). This is echoed by Holloway and Kneafsey (2017), who stress the importance of the rural setting; something Enticott (2003) links to ideals of immunity and resilience. At the same time, Cox et al. (2008) show that many consumers select raw milk for its perceived nutritional and flavour qualities.

The proportion of farms selling raw milk is very small in the UK (0.01% of dairy producers) (Food Standards Agency [FSA], 2017), although UK government policy statements are broadly supportive of the alternative food economy in reducing food miles and promoting rural sustainability (Defra, 2020b), as other commentators have been (Enticott, 2003; Lamine, 2015). Whether raw milk represents a realistic challenge to the mainstream *purified milk* model is an ongoing debate (Rahn et al., 2017) but sales are increasing (Simmonds, 2017) and many farmers have welcomed this in a period of increasing pressure on profits (AHDB, 2018, 2020). The most pressing critique of raw milk relates to safety, however, and the prevalence of livestock diseases which are transmissible to humans (Nimmo, 2010). Bovine tuberculosis, Q fever (Halsby et al., 2017) and campylobacteriosis have serious impacts upon human health: precisely the diseases which had been used as political arguments for the justification of mass-scale pasteurisation. While in the UK it remains legal for farmers to sell raw milk, this is not the case in other global regions (for example, Canada, Scotland and some states in the US) where it is prohibited (Adetunji et al., 2020). The Food Standards Agency in the UK describes it as a 'high-risk food' that consumers need to be informed about (FSA, 2017).

Milk pasteurisation is concerned with rendering 'the raw' and the 'risky' safe for consumption, an act of disaggregating milk from its animal origins and bacterial 'contaminants' (Tirosh & Eldan, 2017; Wiley, 2016). This has worked in tandem with the gradual geographical separation of consumers from the countryside and its cows over time, which Nimmo (2010, p. 17) interprets as the divergence of 'biology' from 'culture': two distinct realms that in normative foodscapes are held 'strictly apart in a dichotomy which defines and constitutes each as a separate pure domain, free from contamination by the other'. As Brembeck and Johansson (2010) have stated, however, while separation may ostensibly be concerned with reducing risk, the processes by which distance is inserted between consumers and producers can paradoxically exacerbate mistrust and confusion about provenance, ethics, purity and quality (Nimmo, 2017; Paddock, 2015; Tirosh & Eldan, 2017). Raw milk, by contrast, encourages connection between consumption and production and our research sought to establish how this worked practically. Before setting out our findings, however, we describe our methods.

Methods and methodology

The research began in March 2017 and was completed in April 2019. A qualitative method was chosen with data captured through interviews at five UK agricultural shows where the researchers had reserved trade stands. Agricultural shows are international exhibitions where equipment, machinery, technical innovations and services are showcased to the farming community. Organised in a large exhibition space, farmers travel from stand to stand, speaking to representatives. By setting up a show stand, we were able to capitalise on the significant numbers of farmers passing by and, by displaying some intriguing images (such as pictures of cattle, medication and farmers at work), we were able to stimulate visitors' interest and secure conversations with them when they approached us.

The project was originally designed around issues of farm income sustainability and the risks posed by Britain's exit from the European Union and so the questions we began with were broad: 'how concerned are you about disease outbreaks?', 'how sustainable is your current level of farm income?' and 'what concerns do you have about Brexit?', before we followed up with more focused questions such as 'how likely would it be for you to pursue new forms of income such as raw milk sales?' During the first stage of our data collection (phase one, March 2017 – September 2018), we sought as large a sample as possible from the shows we attended so we incorporated both beef and dairy farmers as well as other stakeholders to add contextual insights.

In phase one, sampling was opportunistic because it was necessarily influenced by the readiness of individuals to approach us at the shows, although the visitors were screened prior to recruitment to ensure that they had awareness of the topic (McEachern et al., 2010). In phase one, two interviewers spoke to 48 cattle farmers, two government representatives, one public relations officer from a major international dairy company, one representative from a cattle pharmaceutical company and four veterinary surgeons working in the cattle health sector. All respondents were milk consumers but displayed varying enthusiasm for raw milk. Following this sample of 56 interviews we narrowed our focus to conduct in-depth interviews in phase two (October 2018 – April 2019) and restricted participants to dairy business owners.

Phase two involved one interviewer conducting a further 20 interviews (representing 38 hours of spoken material) with those dairy farmers who were willing to develop their contribution by telephone and face-to-face. Interviews were recorded in shorthand and later transcribed. Where phase one interviews were generally brief (approximately 15 minutes), in phase two, the interviews were significantly longer (most taking one or two hours). In both phases, we relied upon the sociable connections brokered through the show stands and did not offer payment or other incentives for participation. The overwhelming majority of participants were male (because the attendees at the shows were mainly male), but in phase two we were able to spend more time talking to two female farmers who became important interlocutors. All participants were briefed about the research and given assurances about anonymity following the Committee on Publication Ethics (COPE) guidance. Ethical approval was given by the researchers' institutions. In compliance with institutional guidelines, the interviews were recorded, consent acquired, and participants were informed of their right to withdraw participation at any time. The authors also made extensive field notes. Interview transcripts were stored on password

protected computers and no physical copies retained. For anonymity, generic pseudonyms replaced the participants' identities.

The data were analysed using an inductive, grounded theory approach. All typed and transcribed interviews and field notes were coded, and analytical themes were selected from a hermeneutic process of reading the whole and the parts (Thompson, 2004). We interwove the thematic narrative with a more contextualised discussion of the theory introduced in the previous sections; a process that Thompson and Coskuner-Balli (2007, p. 278) have called 'grounded reading in data'. The thematic analysis allowed us to identify and expose common themes across the transcripts and, as the analysis progressed, these themes were reviewed and refined into more detailed codes (Bryman, 2016; King, 2004). Hence, initial coding allowed us to map participants' general awareness, understanding and attitudes towards 'farming' milk, while the second coding phase looked more deeply using descriptive, open-coding techniques (King & Horrocks, 2010) to refine a set of recurring themes, uppermost of which was the notion of milk purity and 'goodness' – both of taste and quality. The authors discussed and agreed the coding of the dataset, codes and codes definition.

'Why would anybody do it?' Making the decision to sell raw milk

Among those farmers who were not selling raw milk (just over 80% of those interviewed), the vast majority stated that the risk of human disease was their main reason and that they were reassured by industrial processes of 'purification' (Nimmo, 2010, 2011, 2017). These farmers embraced processing and stated that pasteurisation was a powerful shield against food safety risk and commercial losses arising from public criticism. When asked about raw milk, however, almost all these interviewees appeared concerned that the risks posed by raw milk were currently understated:

- Farmer 1: The risk worries me; the rewards being minimal when compared to the risk involved in selling raw milk. The risks of passing on diseases are disproportionate to the possible rewards. There's campylobacter, tuberculosis, Johne's disease.
- Interviewer 1: Are there any conditions under which you might consider venturing into raw milk?
- Farmer 1: If it was small scale, in the interest of one member of the farm . . . in an affluent local population . . . in a low TB risk area . . . then maybe.
- Interviewer 2: So how do you feel about it in the area where you are farming?
- Farmer 1: Being frank? I'm very happy to send all the milk I produce off to a big factory. There are a lot of disease breakdowns.

An executive director of a large dairy corporation echoed these reservations:

Why would anybody do it? Raw milk is risky, dangerous. Sooner or later there'll be a backlash. For our company, like a lot of dairies, there would be public relations problems. We don't allow

any farmers to do this as part of their contract with us. Any hint of public health contamination would be bad news for us. We don't want it at all. It could taint our brand.

This comment prompted us to enquire what motivated the balance of our sample (just under 20%) to sell raw milk and how they dealt with safety concerns. While the raw milk farmers we spoke to were not oblivious to risk, they countered it by referring us to the myriad benefits that their customers articulated:

Farmer 3: One of my regulars says that raw milk is making her daughter's skin complaint better. I don't know if that can be true but she comes religiously every week to get more milk. Her daughter won't drink anything else now. The rest of the family don't have it but the little girl always tells me that it tastes so much better.

This farmer was careful not to overstate the health credentials of raw milk but was, nonetheless, attuned to his customers' perception of it as a health-giving product; something echoed by other farmers:

Farmer 5: At our machine, we have a lot of body-builders who come and get our milk because they tell us that it is an isotonic drink. I don't know what that means but that's OK, so long as they keep coming back.

There is ambivalence about the language that their customers used ('isotonic', for example), and the truth of the claim being made, but there is also pragmatism that such claims supported financial sustainability. This was emphasised by Farmer 2 when describing the financial challenges on her farm:

Farmer 2: We took a good look at our finances back in 2015. We were in a spiral, a downturn. The milk price was very low, we were tied into a bad contract. We started to look for new innovations and realised that we could make a good return out of raw milk – with the right set up – so we sold the cars, cashed in some pensions, invested our money and went for it. We've had a fast payback, have no overdraft anymore, we are in touch with our customers and we've cut out the middle-man. It's enabled us to employ a new herd manager.

The benefits were clearly articulated by this farmer, who regarded financial sustainability as the freedom from debt and 'bad contracts' and the elimination of intermediaries (dairies, supermarkets). This constitutes a form of resistance to the normative mass market supply (McEachern et al., 2010; Morris & Kirwan, 2010) through developing closer connections to consumers and was a theme that all the raw milk producers stressed, particularly when referring to the nostalgia that some of their customers displayed (Cox et al., 2008):

Farmer 9: A few of our customers are of the older generation and they like to taste the milk of their childhood. I am not sure what they see when they come

to the vending machine. We use up-to-date methods, we take our welfare very seriously, we use medicines, but I suppose at least they are seeing the cows for themselves and maybe that puts them in mind of their youth.

While demonstrating some familiarity with their customers' tastes, this farmer also acknowledges the difficulty of understanding milk production through their eyes when stating that, 'I am not sure what they see'. This uncertainty arises from the juxtaposition of pride over their 'up-to-date methods' against the customers' desire for 'the milk of their childhood'. The farmer is highlighting satisfaction over the benefit that technologies of production have yielded (including animal welfare and medicines) but suggests that this may not be perceived by the consumer who wants to reminisce about the taste of the past.

In sharp contrast to the espoused nostalgia of 'the milk of their childhood', all our participants – whether raw milk vendors or not – aspired to use cutting-edge technologies, medicines, management systems and feed strategies. This signalled confidence in both technoscience and their own professional knowledge and was supported in interviews with veterinary surgeons too:

- Veterinary surgeon: The ideal of high production volumes and high animal health and welfare standards are mutually dependent. The old-fashioned way of farming resulted in poor production yields but also really poor outcomes for cattle which is something a lot of activists just don't understand when they say, 'let's go back to small-scale farming'. None of my farm clients are factory farms.
- Interviewer 1: Can you explain what you mean?
- Veterinary surgeon: The term 'factory farm' is a nonsense. The cows I see are benefiting from being in more intensive units because farmers are more professional, medicines can be bought more cheaply and the vet will be out routinely to check [on them]. The farmer will be on the lookout for problems and treats the whole job better.

This vet suggests that farmers were highly motivated by management techniques and milking technologies. Accordingly, 'backstage' farmer discourses revolved around productivity, hygiene and quality, which they saw as mutually dependent upon (rather than in tension with) good animal health and welfare. Yet they were conscious of the possible conflicts between the different 'worlds' of professional and consumer knowledge; there was a perceived risk that technoscience might be interpreted as unwelcome interference in the milk supply.

Recent anti-dairy critiques have cited reproduction and yield performance techniques as unacceptable (Gillespie, 2013) forms of 'alienation' of animal products from their bodies (Adams, 2017). Critics suggest that the cow is incorporated into a grid of supply and demand, circulation, quantification and standardisation (Nimmo, 2011) that creates

an 'exploitative system' of enslavement (Cohen & Otomo, 2017, p. 2). It is a risk to raw milk farmers that opening their farms to visitors may fuel unease, disgust or criticism on the part of consumers. To mitigate such possible criticisms, cattle were positioned as a visual and embodied means through which different narratives about goodness, nostalgia and quality were brokered:

Farmer 10: I watch them [the customers] on the CCTV camera when they drive up to the farm. I can predict that out of every hundred visitors, ninety-nine go up to the calves and lean over and look at them. They look at the cows in the barn and lean on the gate. Then they go and get their milk before, usually, going back to the cows and calves for another look.

This farmer's enthusiasm for modernity and precision was, from her or his point of view, observable in the form of the healthy animal: the living repository of professional value. The farmer was also aware that customers would not 'observe from a distance' but chose raw milk because it was 'mixed up with' its surroundings (Brembeck & Johansson, 2010, p. 815). The physical environment of production and animals worked with the actions that surround the purchase: 'leaning over', 'leaning on the gate' and going back for 'another look'; the sight and smell of their animals constituted an important and attractive part of their offering. They tacitly noted what Shilling (2018) terms the 'body pedagogics', that accessing animals and the surroundings of the farm generates affective value. In this farmer's view, the sensory experience constituted a form of education about the professionalism with which they carried out their work:

Farmer 2: When we went looking for our new herd manager, we wanted a people person. There are a lot of herd managers who can't speak to people. But we wanted someone to be good with the public, happy to chat, happy to explain what we make, how we do it and how important the animals are to us. This fits round what we are doing online with our social media which is a bit more dedicated to cattle welfare but having someone to explain to the general public face-to-face is so much better than digital. And that's what these raw milk customers want. A bit of a chat. See the cows.

Farmers were aware that their readings of quality, value, 'goodness' and 'purity' may be different from those of their customers but regarded cattle as vital actors in bridging the switch of world (Latimer & Munro, 2006) between producer and consumer. Here, the multiple nature of consumer taste worked to their advantage, for as Bachelard (1942/1999) states: milk's 'opacity makes of it a screen that reflects back a cornucopia of meanings' (quoted in Cohen & Otomo, 2017, p. 64).

Producers countered negative messages about 'food risk' and 'food safety' (Rahn et al., 2017) by stating that *their customers* perceived raw milk to be beneficial and, as producers, they were happy to sell it. Aware of the different reasons why their customers bought raw milk from them, they demonstrated ambivalence to the 'truth' of milk knowledge discourses and managed their social interactions and displays accordingly. Farmers

were careful about what messages they revealed and to whom. When interviewed, for example, during their ‘backstage’ moments at the agricultural shows, the producers made strident critical comments about activist standpoints, including veganism. One farmer stated, for example, ‘Some [raw milk buyers] want to teach their kids about food and where it comes from [which they encouraged]’ but also commented that vegans were ‘liars’ who ‘didn’t know anything about food production’. Farmers did not discuss such contentious themes with their customers but used the technique of ‘reflecting back’ (Bachelard, 1942/1999) when capitalising on the sensory stimulation that the farm afforded. This was evident when they depicted the powerful effects of customers ‘seeing’ their milk:

Farmer 8: Our milk sells itself. People can’t get enough. They can see it through the glass bottles, a lovely creamy colour, and because it is not in plastic, they know exactly what they are buying.

Here, the farmer indicates that just as seeing the cattle appears to work as an important part of the purchasing process, seeing the milk also signifies its goodness through its colour and glass packaging. It is not that the concept of industrial processing as an act of purification is being resisted here, rather the specific qualities of their own milk (‘loveliness’, ‘creaminess’) are foregrounded as sensory gauges of goodness and quality. Farmers magnify their values by utilising milk and cattle as a proxy for their professional dedication but when stating that the milk is so good that ‘it sells itself’ they also downplay the significant social effort involved in managing their relationships with customers.

What counts as knowledge changes in different communities of practice (Latimer & López Gómez, 2019) and there was a tacit awareness among farmers that cows and milk could also be ‘read’ differently by customers in search of food messages quite distinct from their own intended communications. They remained aware of the potential ‘taint’ that certain discourses could inflict. While bearing in mind the partial and political nature of the process of building connections with customers, there were appeals to the senses, to bodies and to the importance of situated context that entangled farmers, consumers and animals together.

Discussion: Intimate entanglements that connect production and consumption

Tasting, seeing, smelling and acquiring food are deeply significant as sensory experiences (Amerine et al., 2013) and the process of purchasing raw milk underlines this. Visiting a farm to acquire milk requires that humans, nonhumans, sheds, barns, gates and machines are entangled (Latimer & López Gómez, 2019): an observable social phenomenon infused by the political and economic relations that hold it together. This ‘holding together’ is a form of affective intimacy. As Walkerdine (2016, p. 710) points out, affective intimacy is contoured by ‘common meanings’ which may emerge from historical cultural values but which ‘can have an effect in relation to the construction of communal beingness in the present’. In the case of raw milk, historical messages about nourishment

as well as localism, health, taste and nostalgia (Dowler et al., 2009; Enticott, 2003; Rahn et al., 2017; Winter, 2003b) work closely with the sensory feeling of 'beingness' that is generated at the moment of purchase (Walkerdine, 2016, p. 712). This affective, sensory intimacy of close encounters or tangles is how raw milk becomes, quite literally, 'part of one's parts' (Strathern & Latimer, 2019) for consumers.

Raw milk offers a closer entanglement between elements of production and the sensory experience of place, something that can *enhance* the experience of acquiring it (Enticott, 2003) rather than fostering concerns about 'impurity'. As Atkinson and Deeming (2015) have remarked, the consumption of cow's milk is a social and relational experience and raw milk producers affirmed this when expressing that seeing and tasting was entangled with sociability and a sense of place, enhanced by the living presence of cattle. The 'embodied processes' involved in the raw milk entanglement could be described as a form of body pedagogics (Shilling, 2018) in which consumers acquire particular messages, knowledges and experiences of their food. By contrast, foods that rest upon distance and disconnection (Winter, 2003a) 'limit our questions' (Latimer & López Gómez, 2019, p. 247) about what represents a good choice by reducing the sensory affect that emerges from the active acquisition of provisions from their origins. The 'marginalisation and invisibilisation of the affective and embodied dimensions' (Latimer & López Gómez, 2019, p. 250) of smell, touch, sight and taste contributes to a sanitised environment in which a homogenised product offering, wrapped in branded packaging, can replace the need for 'intimacy' arising from subjective judgement.

While farmers positioned themselves as informal educators at times – and expressed strong critical opinions about veganism (in particular) – it was common for them to remain neutral about the benefits that consumers sometimes claimed for raw milk. Instead, producers 'reflected back' (Bachelard, 1942/1999) varied consumer discourses of 'goodness' such that animals and the physical setting of the farmyard – rather than being something consumers put up with – were enrolled as important resources in the commercial exchange (Lupton & Chapman, 1995). Ideals of purity were shifted (Latimer, 2009) by farmers to accommodate the immediate sensory messages that consumers talked about or displayed when visiting the farm. Raw milk farmers recognised that farmyard 'mess' and animals were not a risk to notions of purity and goodness but were the important means by which connections were strengthened. They were able to get 'in touch' with their buyers who were enthusiastic to 'see the cows, have a look', 'lean over the gate' as well as see the milk 'through the glass' – acts of connection that are rarely possible in the normative foodscape.

Morris and Kirwan (2010) describe food that is tightly bound up with its origin as being *naturally embedded*, something they suggest is particularly important in the market for meats and cheeses that rely upon particular grassland and biodiversity messages to create powerful connections between producers and consumers. This is a useful concept that has applicability to the provisioning of raw milk because the senses are closely connected to the context in which the product is acquired (Enticott, 2003), and it is this which supports a positive, intimate experience. Producers strengthened the embedded nature of their milk by brokering 'socio-material relations in knowledge-making and communities of practice' (Latimer & López Gómez, 2019) and by countering socio/technical boundaries (Raffles, 2002) between the different knowledges of producers and

consumers. They downplayed their enthusiasm for technology and intensive production and were careful to reveal only messages such as ‘loveliness’ and ‘creaminess’. They did not discuss the specificities of day-to-day cattle management: precisely those activities that have led many vegans to eschew animal-produced foods (Gillespie, 2013) or pursue plant-based ‘mylks’ (Clay et al., 2020).

While the intimacy afforded to consumers is partial, as an alternative to the mainstream shopping process the act of travelling to a farm to acquire raw milk encourages consumers to witness their own relationship to things (such as sheds, gates, vending machines), humans and other-than-human life. Powerful sensory messages are activated when customers are ‘seeing the animals’ and ‘seeing the milk’. These naturally embedded (Morris & Kirwan, 2010) sensory phenomena are the ‘force or forces of encounter’ (Gregg & Seigworth, 2010, p. 2) that (re)connect the food chain and lend power to particular, subjective, readings of ‘goodness’ and ‘purity’.

Conclusion

Through successive marketing messages, milk has become a symbol of citizenship, nourishment, care, kinship and cultural bonds (DuPuis, 2002; Smith-Howard, 2017) so it is unsurprising that for many consumers, milk is integral to their weekly provisioning. Within a changing foodscape, however, raw milk fits within a rapidly expanding market for alternative forms of consumption. Unlike ‘alternative milks’, raw milk is distinctive because it is not a new food and the nostalgia for unpasteurised milk appears to be a reason why some consumers choose it (Cox et al., 2008; Enticott, 2003), which our interviews supported. Raw milk does not address all contemporary critiques of dairy production (Adams, 2017; Gillespie, 2013) but it presents an important interruption to the normative foodscape by bringing the means and ends of the food chain closer together (Cox et al., 2008; Lamine, 2015; Winter, 2003a, 2003b). We have explored this proximity as an intimate entanglement (Latimer & López Gómez, 2019) by considering the affective feel that producers seek to nurture with their customers.

While traditional milk marketing messages have capitalised upon the ‘purity’ of modern industrialised pasteurisation, raw milk’s purity emerges from its embeddedness within a rural foodscape (Neill & Williams, 2016; Smith-Howard, 2017). Whereas pasteurisation is concerned with rendering the raw and the ‘risky’ safe for consumption, an act of disaggregating milk from its animal origins and bacterial ‘contaminants’ (Nimmo, 2010; Tirosh & Eldan, 2017), raw milk’s ‘purity’ revolves around the (re)connection of consumers, cows and the farm – an experience that brings sensory experiences of consumption closer to agriculture(s). Raw milk thereby challenges the industrialised food model of separation and technification (Nimmo, 2017) – a model which has rested upon pasteurisation and historic narratives about quality, cleanliness and health. Raw milk supports alternative readings of goodness, purity and the value of consumption but it is the symbolic work that the concept of ‘goodness’ performs rather than its ‘truth’ which is of interest here.

‘Goodness’ is a term that, like milk itself, can reflect back multiple meanings and values (Bachelard, 1942/1999) – an ideal substrate for supporting the feelings that get attached to food. The ‘purity’ of raw milk becomes positioned as synonymous with

sensory perception of the product in that customers might ‘see for themselves’ the benefits that milk purportedly characterises. Importantly, what consumers feel is influenced by what producers reveal: a performance that does not lay bare their aspiration for technoscience, production and profitability but which mobilises animal bodies, gates, vending machines as vehicles for subjective judgement. There is a calculated risk to be balanced: economic viability against the potential for disease transmission. For producers, then, ‘goodness’ provides a useful umbrella term under which they activate carefully chosen messages to foreground their animals and their professional dedication at the same time as remaining open to the advantages that consumers generate by visiting the farm to ‘have a chat’, ‘see the cows’ and buy the milk: a product so ‘good’ that it apparently ‘sells itself’.

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References

- Abbots, E., & Lavis, A. (2013). *Why we eat, how we eat – Contemporary encounters between foods and bodies*. Routledge.
- Adams, C. (2017). Feminized protein: Meaning, representations and implications. In M. Cohen & Y. Otomo (Eds.), *Making milk* (pp. 19–40). Bloomsbury.
- Adetunji, S. A., Ramirez, G., Ficht, A., Perez, L., Foster, M., & Arenas-Gamboa, A. (2020). Building the evidence base for the prevention of raw milk-acquired brucellosis: A systematic review *Frontiers in Public Health*, 8(76), 1–10.
- Agriculture and Horticulture Development Board. (2018). https://dairy.ahdb.org.uk/market-information/farming-data/dairy-farm-incomes/farm-business-income/#.Wxplg_ZFx1w (accessed 8 June 2018).
- Agriculture and Horticulture Development Board. (2020). <https://ahdb.org.uk/news/the-financial-impact-of-covid-19-market-disruption-and-production-reduction-measures-on-dairy-farms> (accessed 17 July 2020).
- Amerine, M. A., Pangborn, R. M., & Roessler, E. B. (2013). *Principles of sensory evaluation of food*. Elsevier.
- Arvidsson, M. (2017). DIY plant milk: A recipe-manifesto and method of ethical relations, care and resistance. In M. Cohen & Y. Otomo (Eds.), *Making milk* (pp. 247–250). Bloomsbury.
- Atkins, P. (1992). White poison? The social consequences of milk consumption, 1850–1930. *Society for the Social History of Medicine*, 5(2), 207–227.
- Atkins, P. (2010). *Liquid materialities: A history of milk, science and the law*. Ashgate.
- Atkinson, W., & Deeming, C. (2015). Class and cuisine in contemporary Britain: The social space, the space of food and their homology. *The Sociological Review*, 63(4), 876–896.
- Bachelard, G. (1999). *Water and dreams: An essay on the imagination of matter* (3rd ed.). Dallas Institute of Humanities and Culture (Original work published 1942).
- Brembeck, H., & Johansson, B. (2010). Foodscapes and children’s bodies. *Culture Unbound*, 2, 797–818.
- Bryman, A. (2016). *Social research methods* (5th ed.). Oxford University Press.
- Clay, N., Sexton, A. E., & Garnett, T. (2020). Palatable disruption: The politics of plant milk. *Agriculture and Human Values*, 37, 945–962.
- Cohen, M., & Otomo, Y. (2017). Introduction. In M. Cohen & Y. Otomo (Eds.), *Making milk* (pp. 1–4). Bloomsbury.

- Cox, R., Kneafsey, M., Venn, L., & Holloway, L. (2008). Constructing sustainability through reconnection: The case of 'alternative' food networks. In G. M. Robinson (Ed.), *Sustainable rural systems: Sustainable agriculture and rural communities* (pp. 67–82). Ashgate.
- Department for Environment, Food and Rural Affairs. (2020a). *Dairy farming and schemes*. www.gov.uk/guidance/dairy-farming-and-schemes (accessed 14 January 2021).
- Department for Environment, Food and Rural Affairs. (2020b). *Latest statistics on milk utilisation by dairies – national statistics*. www.gov.uk/government/statistics/milk-utilisation-by-dairies-in-england-and-wales (accessed 14 January 2021).
- Doyle, J. (2016). Celebrity vegans and the lifestyling of ethical consumption. *Environmental Communication*, 10(6), 777–790.
- Dowler, E., Kneafsey, M., Cox, R., & Holloway, L. (2009). 'Doing food differently': Reconnecting biological and social relationships through care for food. *The Sociological Review*, 57(s2), 200–221.
- DuPuis, M. (2002). *Nature's perfect food: How milk became America's national drink*. New York University Press.
- Elwood, P. C., Pickering, J. E., Givens, D. I., & Gallacher, J. E. (2010). The consumption of milk and dairy foods and the incidence of vascular disease and diabetes: An overview of the evidence. *Lipids*, 45(10), 925–939.
- Enticott, G. (2003). Lay immunology, local foods and rural identity: Defending unpasteurised milk in England. *Sociologia Ruralis*, 43(3), 257–270.
- Finnell, K. J., & John, R. (2017). A social marketing approach to 1% milk use: Resonance is the key. *Health Promotion Practice*, 19(3), 437–444.
- Food Standards Agency. (2017). *Raw drinking milk hygiene guidance*. www.food.gov.uk/business-guidance/raw-drinking-milk-hygiene-guidance (accessed 17 July 2020).
- Fuller, F., Huang, J., Ma, H., & Rozelle, S. (2006). Got milk? The rapid rise of China's dairy sector and its future prospects. *Food Policy*, 31, 201–215.
- Gillespie, K. (2013). Sexualised violence and the gendered commodification of the animal body in Pacific Northwest US dairy production. *Gender, Place and Culture: A Journal of Feminist Geography*, 21(10), 1321–1337.
- Gomart, É., & Hennion, A. (1999). A sociology of attachment: music lovers, drug addicts. In J. Law & J. Hassard (Eds.), *Actor network theory and after* (pp. 220–247). Blackwell.
- Goodman, D., & DuPuis, E. M. (2002). Knowing food and growing food: Beyond the production–consumption debate in the sociology of agriculture. *Sociologia Ruralis*, 42, 5–22.
- Gregg, M., & Seigworth, G. (2010). *The affect theory reader*. Duke University Press.
- Griffith, C. J., Livesey, K. M., & Clayton, D. (2010). The assessment of food safety culture. *British Food Journal*, 112(4), 439–456.
- Hadrich, J. C., Wolf, C., & Johnson, K. (2017). Characterizing US dairy farm income and wealth distributions. *Agricultural Finance Review*, 77(1), 64–77.
- Halsby, K., Kirkbride, H., Walsh, A., Okereke, E., Brooks, T., Donati, M., & Morgan, D. (2017). The epidemiology of Q fever in England and Wales 2000–2015. *Vet Science*, 4(2), 28. <https://doi.org/10.3390/vetsci4020028>
- Holloway, L., & Kneafsey, M. (2017). Producing-consuming food: Closeness, connectedness and rurality in four 'alternative' food networks. In L. Holloway & M. Kneafsey (Eds.), *Geographies of rural cultures and societies* (pp. 262–282). Routledge.
- Hollywood, L., Wells, L., Armstrong, G., & Farley, H. (2013). Thinking outside the carton: Attitudes towards milk packaging. *British Food Journal*, 115(6), 899–912.
- King, N. (2004). Using templates in the thematic analysis of text. In C. Cassell & G. Symon (Eds.), *Essential guide to qualitative methods in organizational research* (pp. 256–270). Sage.

- King, N., & Horrocks, C. (2010). An introduction to interview data analysis. In N. King, C. Horrocks, & J. Brooks (Eds.), *Interviews in qualitative research* (pp. 142–174). Sage.
- Lamine, C. (2015). Sustainability and resilience in agrifood systems: Reconnecting agriculture, food and the environment. *Sociologia Ruralis*, 55(1), 41–61.
- Latimer, J. (2009). Unsettling bodies: Frida Kahlo's portraits and in/dividuality. In J. Latimer & M. Schillmeier (Eds.), *Un/known bodies, sociological review monograph* (pp. 46–62). Blackwell.
- Latimer, J., & López Gómez, D. (2019). Intimate entanglements: Affects, more-than-human intimacies and the politics of relations in science and technology. *The Sociological Review*, 67(2), 247–263.
- Latimer, J., & Munro, R. (2006). Driving the social. *The Sociological Review*, 54(1), 32–53.
- J. Latimer & Schillmeier, M. (Eds.). (2009). *Un/known bodies*. The Sociological Review monograph series. Wiley-Blackwell.
- Linn, A. (2018). Making milk with conscious care: Raw milk ontologies and the practices of 'bath milk' producers in Victoria. *Australian Journal of Rural Studies*, 65, 135–142.
- Linne, T., & McCrow-Young, A. (2017). Plant-based milk: From obscurity to visions of a post-dairy society. In M. Cohen & Y. Otomo (Eds.), *Making milk* (pp. 195–212). Bloomsbury.
- Lupton, D., & Chapman, S. (1995). 'A healthy lifestyle might be the death of you': Discourses on diet, cholesterol control and heart disease among the lay public. *Sociology of Health and Illness*, 14(4), 477–494.
- Martin, A., Myers, N., & Viseu, A. (2015). The politics of care in technoscience. *Social Studies of Science*, 45, 625–641.
- McEachern, M., Warnaby, G., Carrigan, M., & Szmigin, I. (2010). Thinking locally, acting locally? Conscious consumers and farmers markets. *Journal of Marketing Management*, 26(5), 395–412.
- McEachern, M., & Willock, J. (2004). Producers and consumers of organic meat: A focus on attitudes and motivations. *British Food Journal*, 106(7), 534–552.
- McGivney, A. (2020, January 7). 'Like sending bees to war': The deadly truth behind your almond milk obsession. *The Guardian*. www.theguardian.com/environment/2020/jan/07/honeybees-deaths-almonds-hives-aoe (accessed 9 March 2020).
- Morgan, K. (2010). Local and green, global and fair: The ethical foodscape and politics of care. *Environment and Planning*, 42, 1852–1867.
- Morris, C., & Kirwan, J. (2010). Food commodities, geographical knowledges and the reconnection of production and consumption: The case of naturally embedded food products. *Geoforum*, 41, 131–143.
- Munro, R. (2012). The disposal of place: Facing modernity in the kitchen-diner. *The Sociological Review*, 60(2), 212–231.
- Neill, C. L., & Williams, R. B. (2016). Consumer preference for alternative milk packaging: The case of an inferred environmental attribute. *Journal of Agricultural and Applied Economics*, 48(3), 241–256.
- Nimmo, R. (2010). *Milk, modernity and the making of the human: Purifying the social*. Routledge.
- Nimmo, R. (2011). Bovine mobilities and vital movements: Flows of milk, mediation and animal agency. In J. Bull (Ed.), *Animal movements, moving animals: Essays on direction, velocity and agency in humanimal encounters*. Crossroads of knowledge, vol. 17, (pp. 57–74). Uppsala University Press.
- Nimmo, R. (2017). The mechanical calf: On the making of a multispecies machine. In M. Cohen & Y. Otomo (Eds.), *Making milk* (pp. 81–98). Bloomsbury.
- Paddock, J. (2015). Positioning food cultures: 'Alternative' food as distinctive consumer practice. *Sociology*, 50, 1039–1055.

- Pecoraro, M. G., & Uusitalo, O. (2014). Conflicting values of ethical consumption in diverse worlds: A cultural approach. *Journal of Consumer Culture*, 14(1), 45–65.
- Poore, J., & Nemecek, T. (2018). Reducing food's environmental impacts through producers and consumers. *Science*, 360(6392), 987–992.
- Raffles, H. (2002). Intimate knowledge. *International Social Science Journal*, 54, 325–335.
- Rahn, W., Gollust, S. E., & Tang, X. (2017). Framing food policy: The case of raw milk. *Policy Studies Journal*, 45(2), 359–383.
- Sexton, A. E., Garnett, T., & Lorimer, J. (2019). Framing the future of food: The contested promises of alternative proteins. *Environment and Planning E: Nature and Space*, 2(1), 47–72.
- Shilling, C. (2018). Embodying culture: Body pedagogics, situated encounters and empirical research. *The Sociological Review*, 66(1), 75–90.
- Simmonds, C. (2017, May 30). Raw milk: Superfood or super risky? *The Guardian*. www.theguardian.com/lifeandstyle/2017/may/30/raw-milk-health-superfood-safety-goop (accessed 18 May 2018).
- Smith-Howard, K. (2017). *Pure and modern milk: An environmental history since 1900*. Oxford University Press.
- Strathern, M. (1991). *Partial connections*. Rowman & Littlefield.
- Strathern, M., & Latimer, J. (2019). A conversation. *The Sociological Review*, 67(2), 481–496.
- Tallberg, L. (2020). *Animal organizations: A dialogue* [unpublished discussion paper]. Hanken School of Economics, Helsinki.
- Thompson, C. J. (2004). Marketplace mythology and discourses of power. *Journal of Consumer Research*, 31(1), 162–180.
- Thompson, C. J., & Coskuner-Balli, G. (2007). Enchanting ethical consumerism: The case of community supported agriculture. *Journal of Consumer Culture*, 7(3), 275–303.
- Tirosh, Y., & Eldan, Y. (2017). Milk, adulteration, disgust: Making legal meaning. In M. Cohen & Y. Otomo (Eds.), *Making milk* (pp. 99–116). Bloomsbury.
- Walkerline, V. (2016). Affective history, Working-class communities and self-determination. *The Sociological Review*, 64(4), 699–714.
- Warde, A., & Yates, L. (2016). Food and eating. *Discover Society*. <https://discoversociety.org/2016/09/06/focus-food-and-eating> (accessed 13 May 2020).
- Westhoek, H., Lesschen, J. P., Rood, T., Wagner, S., De Marco, A., Murphy-Bokern, D., Leip, A., van Grinsven, H., Sutton, M. A., & Oenema, O. (2014). Food choices, health and environment: Effects of cutting Europe's meat and dairy intake. *Global Environmental Change*, 26, 196–205.
- Wiley, A. (2016). *Re-imagining milk* (2nd ed.). Routledge.
- Winter, M. (2003a). Geographies of food: Agro-food geographies – making reconnections. *Progress in Human Geography*, 27(4), 505–513.
- Winter, M. (2003b). Embeddedness, the new food economy and defensive localism. *Journal of Rural Studies*, 19(1), 23–32.